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JOHN F NETHERY  
MCANDREWS HELD & MALLOY LTD  
500 WEST MADISON STREET 34TH FLOOR  
CHICAGO, IL 60661

EXAMINER

KIBLER, VIRGINIA M

ART UNIT PAPER NUMBER

2623

DATE MAILED: 12/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/473,638

**Applicant(s)**

PATEL ET AL.

**Examiner**

Virginia M Kibler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-8,10-15 and 17-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-8,10-15 and 17-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/8/04 has been entered.

### ***Response to Amendment***

2. The amendment received on 11/8/04 has been entered. Claims 1, 3-8, 10-15, and 17-20 remain pending.

### ***Double Patenting***

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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4. Claims 1, 3-7, 10-14, and 17-20 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 7-12 and 14 of U.S. Patent No. 6,529,757. Although the conflicting claims are not identical, they are not patentably distinct from each other because the differences between the claims would have been obvious to one of ordinary skill in the art.

The following table provides a comparison of claim 1 of the instant application and Claims 7-12 and 14 of U.S. Patent No. 6,529,757 to Patel et al., wherein bold faced type indicates differences between the two.

Claim 1 features of the instant application	Corresponding features of Claims 7-12 and 14 of U.S. Patent No. 6,529,757
<b>receiving</b> raw image data from an imaging modality at the image acquisition workstation;	imaging a patient with an imaging modality to form a raw digital image; <b>sending</b> the raw digital image data to an acquisition workstation; (Claim 7, lines 3-6)
<b>storing predetermined preprocessing functions applicable to the raw image data;</b>	
wherein the predetermined <b>preprocessing functions</b> include at least one of a frequency preprocessing function and a contrast preprocessing function;	said predetermined <b>subset of control parameters</b> comprises frequency control parameters (Claim 8)  said predetermined <b>subset of control parameters</b> comprises contrast control parameters (Claim 9)
applying, at the image acquisition workstation, <b>at least one and fewer than all of the preprocessing functions</b> to the raw image data to form partially processed raw image data;	performing a first level of multi-level image data processing of said raw image data at said acquisition workstation with regard to a predetermined <b>subset of control parameters</b> to form a partially processed image (Claim 7, lines 7-10)
transmitting the partially processed raw image data to a <b>PACS network</b> ,	sending said partially processed image to an <b>external connection</b> (Claim 10)

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wherein the PACS network includes a preprocessing database and an image database,	storing said partially processed image in a preprocessing database (Claim 14)  storing the completely processed image in a PACS database (Claim 12)
the preprocessing database utilized for storing the partially preprocessed raw image data,	storing said partially processed image in a preprocessing database (Claim 14)
the image database utilized for storing <b>fully</b> preprocessed image data,	storing the <b>completely</b> processed image in a PACS database (Claim 12)
wherein the fully preprocessed image data is created <b>by applying all</b> of the preprocessing functions to the raw image data to form fully preprocessed image data; and	performing a second level of image data processing <b>completing</b> the image processing and displaying the image at a display workstation (Claim 11)
storing the partially preprocessed raw image data in the preprocessing database,	storing said partially processed image in a preprocessing database (Claim 14)
wherein at least one of the preprocessing functions is <b>subsequently applied</b> to the partially preprocessed raw image data at a display workstation.	<b>performing a second level</b> of image data processing completing the image processing and displaying the image at a display workstation (Claim 11)

The first different between instant claim 1 and patented claim 7 is that instant claim 1 recites “receiving raw image data” and patented claim 7 recites “sending the raw image data.” It would have been obvious to modify claim 7 to include receiving the raw image data.

Second, the instant claim 1 requires the limitation of “storing predetermined preprocessing functions applicable to the raw image data.” Patented claim 7 includes “a predetermined subset of a set of control parameters,” but does not include the limitation of storing the set of control parameters. However, this is well-known and routinely utilized in the art. Therefore, it would have been obvious to modify claim 7 to include storing the set of control parameters.

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The third difference is that of terminology. The instant claim 1 recites “preprocessing functions” whereas the patented claims 7-9 recite “control parameters.” The Examiner considers these phrases to be equivalent in meaning.

The fourth difference is that the instant claim 1 requires applying “at least one and fewer than all of the preprocessing functions” whereas the patented claim 7 requires using a “subset of control parameters.” The patented “subset” would encompass “at least one and fewer than all.”

The fifth difference is that the instant claim 1 requires “transmitting the partially preprocessed raw image data to a PACS network” whereas the patented claim 10 recites “sending said partially processed image to an external connection.” The patented claim 10 is related to a PACS system. It would have been obvious to one of ordinary skill in the art to have modified the external connection to a PACS network.

The sixth difference is that the instant claim 1 recites “fully preprocessed image” whereas the patented claim 12 recites “completely processed image.” The only difference is terminology. The Examiner considers these phrases to be equivalent in meaning.

The seventh difference is that the instant claim 1 recites “the fully preprocessed image data is created by applying all of the preprocessing functions to the raw image data to form fully preprocessed image data” whereas patented claim 11 recites “performing a second level of image data processing completing the image processing.” The patented phrase “completing the image processing” would encompass “applying all of the preprocessing functions.”

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The last difference is that the instant claim 1 recites “at least one of the preprocessing functions is subsequently applied to the partially preprocessed raw image data at a display workstation” whereas the patented claim 11 recites “performing a second level of image data processing completing the image processing and displaying the image at a display workstation.” While the patented claim 11 does not specifically recite “subsequently,” it is understood from the patented claim 7 where “a first level of multi-level image data processing of said raw image data at said acquisition workstation” that “a second level of image data processing... at a display workstation” would be a subsequent action.

Regarding instant claims 7 and 14, an analysis similar to that presented above for instant claim 1 is applicable. While the patented claims do not specify a PACS network, it would have been obvious to one of ordinary skill in the art to do so. The patented claims are related to a PACS system. It is well known in the art for a PACS system to include a PACS network interfaced to an image acquisition workstation. The patented claims include requiring an image acquisition workstation. While the patented claims do not specify a processing circuit or software memory, it would have been obvious to one of ordinary skill in the art to do so.

Regarding instant claims 3, 5, 10, 12, 17, and 19, patented claims 8 and 9 include frequency and contrast control parameters.

Regarding instant claims 4, 6, 11, 13, 18, and 20, the patented claims do not specify RN, RE, RT, GT, GA, GC, or GS preprocessing parameters. However, as indicated by Applicants on page 5, lines 26-33, these preprocessing parameters are the industry standard FUJI Computed Radiography modality preprocessing functions.

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Therefore, it would have been obvious to have modified the preprocessing parameters to specify RN, RE, RT, GT, GA, GC, or GS.

5. Claims 8 and 15 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 7-12 and 14 of U.S. Patent No. 6,529,757 in view of Huang (*PACS: Basic Principles and Applications*).

Regarding claims 8 and 15, an analysis similar to that presented above for instant claims 7 and 14 is applicable. Claims 8 and 15 of the instant application cover equivalent matter as claims 7-12 and 14 of U.S. Patent No. 6,529,757 except for the limitation regarding “at least one preprocessing function applied to form the partially preprocessed raw image data is selected based on the anatomical region.” This limitation is well known in the art as evidenced by Huang (Page 222, para. 3-4). It would have been obvious to one of ordinary skill in the art to modify the invention of claims 7-12 and 14 of U.S. Pat. No. 6,529,757 in view of Huang because it is well known in the art and provides optimal viewing.

6. Claims 1, 3-7, 10-14, and 17-20 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6, 8, and 10 of U.S. Patent No. 6,526,304. Although the conflicting claims are not identical, they are not patentably distinct from each other because the differences between the claims would have been obvious to one of ordinary skill in the art.

The following table provides a comparison of claim 1 of the instant application and Claims 7-12 and 14 of U.S. Patent No. 6,526,304 to Patel et al., wherein bold faced type indicates differences between the two.



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Claim 1 features of the instant application	Corresponding features of Claims 1-6, 8, and 10 of U.S. Patent No. 6,526,304
<b>receiving</b> raw image data from an imaging modality at the image acquisition workstation;	imaging a patient with an imaging modality to form a raw digital image data; <b>sending</b> the raw digital image data to an acquisition workstation; (Claim 1, lines 3-6)
<b>storing predetermined preprocessing functions applicable to the raw image data;</b>	
wherein the predetermined <b>preprocessing functions</b> include at least one of a frequency preprocessing function and a contrast preprocessing function;	said predetermined <b>control parameters</b> comprises frequency control parameters (Claim 2)  said predetermined <b>control parameters</b> comprises contrast control parameters (Claim 3)
applying, at the image acquisition workstation, <b>at least one and fewer than all of the preprocessing functions</b> to the raw image data to form partially preprocessed raw image data;	partially processing said raw image data at the acquisition workstation with regard to predetermined <b>control parameters</b> to form a partially processed image (Claim 1, lines 7-9)
transmitting the partially preprocessed raw image data to a <b>PACS network</b> ,	sending said partially processed image to an <b>external connection</b> (Claim 4)
wherein the PACS network includes a preprocessing database and an image database,	storing said partially processed image in a preprocessing database (Claim 8)  storing the completely processed image in a PACS database (Claim 6)
the preprocessing database utilized for storing the partially preprocessed raw image data,	storing said partially processed image in a preprocessing database (Claim 8)
the image database utilized for storing <b>fully</b> preprocessed image data,	storing the <b>completely</b> processed image in a PACS database (Claim 6)
wherein the fully preprocessed image data is created <b>by applying all</b> of the preprocessing functions to the raw image data to form fully preprocessed image data; and	<b>completing</b> the image processing and displaying the image at a display workstation (Claim 5)
storing the partially preprocessed raw image data in the preprocessing database,	storing said partially processed image in a preprocessing database (Claim 8)
wherein at least one of the preprocessing functions is <b>subsequently applied</b> to the partially preprocessed raw image data at a display workstation.	completing the image processing and displaying the image at a display workstation (Claim 5)

The differences noted in the analysis presented above for instant claim 1 and U.S. Pat. No. 6,529,757 are applicable to the differences between the instant claim 1 and U.S. Pat. No. 6,526,304.

A further difference between instant claim 1 and U.S. Pat. No. 6,526,304 is that the instant claim 1 requires "at least one and fewer than all of the preprocessing functions" whereas the patented claim 1 requires "partially processing said raw image data at the acquisition workstation with regard to predetermined **control parameters** to form a partially processed image." While the patented claim does not specify "at least one and fewer than all of the preprocessing functions" the patented "partially processing...with regard to predetermined control parameters" would encompass "at least one and fewer than all" of the predetermined control parameters.

Regarding instant claims 7 and 14, an analysis similar to that presented above for instant claim 1 is applicable. While the patented claims do not specify a PACS network, it would have been obvious to one of ordinary skill in the art to do so. The patented claims are related to a PACS system. It is well known in the art for a PACS system to include a PACS network interfaced to an image acquisition workstation. The patented claims include requiring an image acquisition workstation. While the patented claims do not specify a processing circuit or software memory, it would have been obvious to one of ordinary skill in the art to do so.

Regarding instant claims 3, 5, 10, 12, 17, and 19, patented claims 2 and 3 include frequency and contrast control parameters.

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Regarding instant claims 4, 6, 11, 13, 18, and 20, the patented claims do not specify RN, RE, RT, GT, GA, GC, or GS preprocessing parameters. However, as indicated by Applicants on page 5, lines 26-33, these preprocessing parameters are the industry standard FUJI Computed Radiography modality preprocessing functions. Therefore, it would have been obvious to have modified the preprocessing parameters to specify RN, RE, RT, GT, GA, GC, or GS.

7. Claims 8 and 15 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6, 8, and 10 of U.S. Patent No. 6,526,304 in view of Huang (*PACS: Basic Principles and Applications*).

Regarding claims 8 and 15, an analysis similar to that presented above for instant claims 7 and 14 is applicable. Claims 8 and 15 of the instant application cover equivalent matter as claims 1-6, 8, and 10 of U.S. Patent No. 6,526,304 except for the limitation regarding "at least one preprocessing function applied to form the partially preprocessed raw image data is selected based on the anatomical region." This limitation is well known in the art as evidenced by Huang (Page 222, para. 3-4). It would have been obvious to one of ordinary skill in the art to modify the invention of claims 1-6, 8, and 10 of U.S. Pat. No. 6,526,304 in view of Huang because it is well known in the art and provides optimal viewing.

### ***Claim Objections***

8. Claims 4, 6, 11, 13, 18, and 20 are objected to because of the following informalities: the terms RN, RE, RT, GT, GA, GC, and GS are not defined. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 3, 5, 7, 8, 10, 12, 14, 15, 17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang (*PACS: Basic Principles and Applications*).

Regarding claim 1, Huang discloses a method for partial preprocessing of raw image data at an image acquisition workstation (Page 200, para. 2, lines 1-2) connected to the PACS system (Page 199, para. 1, lines 1-3) including receiving raw image data from an imaging modality at the image acquisition workstation (Page 199, para. 1, lines 1-3), storing predetermined preprocessing functions applicable to the raw image data (Page 219, para. 4), wherein the predetermining preprocessing functions include at least one of a frequency preprocessing function and a contrast preprocessing function (Page 222, para. 6 and Page 223, para. 1-3), applying, at the image acquisition workstation, at least one and fewer than all of the preprocessing functions to the raw image data to form partially preprocessed raw image data (Page 219, para. 4, lines 10-14), wherein at least one of the preprocessing functions is applied to the partially preprocessed raw image data at a workstation (Page 225-226, Sect. 8.8.2), transmitting the partially preprocessed raw image data to a PACS network (Page 219, para. 4, lines 1-3), and creating fully preprocessed image data by applying all of the preprocessing functions to the raw image data to form fully preprocessed image data (Page 225-226, Sect. 8.8.2). Huang discloses databases (Sect. 7.1.2-7.1.3; Sect. 8.1; Sect. 8.3.1) but does not appear to explicitly

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specify a preprocessing and an image database, however, it would be inherent to include a preprocessing database and an image database, the preprocessing database utilized for storing the partially preprocessed raw image data, the image database utilized for storing a fully preprocessed image data. Furthermore, the claim language does not exclude the preprocessing database and the image database from being a single database. Huang discloses the preprocessing functions are performed by the image acquisition workstation (Sect. 8.7), and does not appear to expressly state any preprocessing functions applied at a display workstation. However, Huang discloses that it is known that a PACS module can function alone as an individual unit (Page 216, Sect. 8.6, para. 1), thereby the image acquisition workstation and the display workstation are the same. Thus, any preprocessing functions applied would be applied at a display workstation. At the time of the invention, it would have been obvious to one of ordinary skill in the art to have modified the applying of preprocessing functions applied to a partially preprocessed raw image data disclosed by Huang to include being performed at a display workstation. The motivation for doing so would have been to prepare the image for an optimal viewing for a self-contained PACS. Therefore, it would have been obvious to modify Huang to obtain the invention as specified in claim 1.

Regarding claim 7, Huang discloses an image acquisition workstation for a PACS (Page 199, para. 1, lines 1-3) and for partial preprocessing of raw image data (Page 200, para. 2, lines 1-2) including a computer (Page. 199, para. 1, line 1), thereby a processing circuit, an imaging modality interface for receiving raw image data (Page 199, para. 3, lines 2-4), and a software memory coupled to the processing circuit (Page, 199,

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para. 1, line 1). The arguments analogous to those presented above for claim 1 are applicable to claim 7.

Regarding claim 14, Huang discloses a medical data network including an imaging modality, an image acquisition workstation and a PACS network interfaced to the image acquisition workstation (Page 200, para. 3, lines 1-5), the PACS network comprising a networked PACS image database, display workstation, and preprocessing database (Page 216, para. 2). The arguments analogous to those presented above for claim 7 are applicable to claim 14.

Regarding claims 3, 10, and 17, the arguments analogous to those presented above for claim 1 are applicable to claim 3, 10, and 17.

Regarding claims 5, 12, and 19, the arguments analogous to those presented above for claim 1 are applicable to claims 5, 12, and 19.

Regarding claims 8 and 15, Huang discloses the raw image data corresponding to an anatomical region, and wherein the at least one preprocessing function applied to form the partially preprocessed raw image data is selected based on the anatomical region (Page 222, para. 3-4).

11. Claims 4, 6, 11, 13, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang (*PACS: Basic Principles and Applications*) as applied to claims 1, 7, and 14 above, and further in view of Takeo et al. (6,231,246).

Regarding claims 4, 11, and 18, Huang discloses applying preprocessing functions including frequency and contrast preprocessing functions (Page 222, para. 6 and Page 223, para. 1-3). Huang does not appear to specify using a frequency preprocessing function characterized by at least one of a RN, RE, and RT preprocessing

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parameter. However, Takeo et al. ("Takeo") teaches that it is known that RN, RE, and RT are frequency characteristics (Col. 10, lines 30-56). It is further submitted, RN, RE, and RT are the industry standard FUJI Computed Radiography modality preprocessing functions, as indicated by Applicants on page 5, lines 26-33. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the frequency preprocessing functions disclosed by Huang to include the characteristics taught by Takeo because they are well known in the art and to explicitly state certain characteristics as a design choice. Therefore, it would have been obvious to combine Huang with Takeo to obtain the invention as specified in claims 4, 11, and 18.

Regarding claims 6, 13, and 20, Huang discloses applying a contrast preprocessing function (Page 222, para. 6 and Page 223, para. 1-3). Huang does not appear to specify using a contrast preprocessing function characterized by at least one of a GT, GA, GC, and GS preprocessing parameter. However, Takeo teaches that it is known that GT, GA, GC, and GS are contrast characteristics (Col. 7, lines 19-24). It is further submitted, GT, GA, GC, and GS are the industry standard FUJI Computed Radiography modality preprocessing functions, as indicated by Applicants on page 5, lines 26-33. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the contrast preprocessing functions disclosed by Huang to include the characteristics taught by Takeo because they are well known in the art and to explicitly state certain characteristics as a design choice. Therefore, it would have been obvious to combine Huang with Takeo to obtain the invention as specified in claims 6, 13, and 20.

***Response to Arguments***

12. Applicant's arguments filed 11/8/04 have been fully considered but they are not persuasive.

Summary of Applicant's Argument: The display workstations of Huang do not perform any preprocessing of the image data. The only functions the display workstations perform is the processing of the image data, which is differentiated from the preprocessing of the image data by Huang (Page 320). Huang clearly does not disclose that a PACS module can comprise an acquisition gateway and a display workstation as shown in Figure 8.12. Huang fails to disclose a PACS network that includes a preprocessing database and an image database. There is no disclosure in Huang discussing two databases for the storage of partially preprocessed image data and fully preprocessed image data separately.

Examiner's Response: The Applicant's arguments on page 13 misquotes the Aug. 11, 2004 Office Action. The Examiner cites section 8.8.2, pages 225-226 for Huang's disclosure that "at least one of the preprocessing functions is applied to the partially preprocessed raw image data at *a workstation*" as opposed to "a display workstation." Huang discloses the preprocessing functions are performed by the image acquisition workstation (Sect. 8.7), and differentiates the preprocessing of the image data and the processing at a display workstation when the image acquisition workstation and the display workstation are separate. However, as indicated in the previous Office Action Huang discloses that a PACS module can function alone as an individual unit, thereby the image acquisition workstation and the display workstation are the same (Sect. 8.6). As argued by Applicant, Huang discloses the acquisition gateway and the display



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workstation as separate in Figure 8.12 (Page 218). However, an acquisition gateway is not claimed. The self-contained PACS disclosed by Huang has connections to some imaging devices, a short-term archive, a database, some display workstations, and a communication network linking the components together. In practice, the module can function alone as an individual unit in which the display workstations show images from the imaging device (Page 216). Therefore, the PACS module can function as an image acquisition workstation wherein it can receive raw image data from an imaging modality. Thus, any preprocessing functions applied at the image acquisition workstation would be applied at the display workstation.

Huang discloses the claimed limitation of applying a preprocessing function to a partially preprocessed raw image data at a workstation (Page 225-226, Sect. 8.8.2). The claim language, "...said predetermined preprocessing functions include at least one of a frequency preprocessing function and a contrast preprocessing function..." requires either a frequency preprocessing function or a contrast preprocessing function. Both a frequency and a contrast preprocessing function are not required by the claim language. Huang discloses storing predetermined preprocessing functions applicable to raw image data including a contrast preprocessing function (Sect. 8.7).

Huang discloses databases (Sect. 7.1.2-7.1.3; Sect. 8.1; Sect. 8.3.1). The claim language does not exclude the preprocessing database and the image database from being a single database. It would be inherent to include a preprocessing database and an image database, the preprocessing database utilized for storing the partially preprocessed raw image data, the image database utilized for storing a fully preprocessed image data.

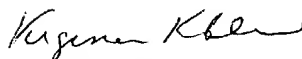
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***Contact Information***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Virginia M Kibler whose telephone number is (703) 306-4072. The examiner can normally be reached on Mon-Thurs 8:00 - 5:30 and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Virginia Kibler can be reached on (703) 306-4072. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Virginia Kibler  
12/07/04

MEHRDAD DASTOURI  
PRIMARY EXAMINER

